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Remarks.

The Examiner's comments and objections and the cited references have been carefully considered by the Applicant.

Reconsideration of the application as hereby amended is respectfully solicited.

Claim Rejections under 35 USC § 112

Claims 15 and 21 have been amended following rejections under 35 USC § 112.

A "Clean Version" with all of the pending claims has been herewith included for substitution of the previously pending claims.

A "Version with markings to show changes made" is also herewith enclosed, and comprises the claims 15 and 21, as amended, and new claim 35.

No new matter has been added.

No rejection under 35 USC § 102 has been formulated.

Claim Rejections under 35 USC § 103

It is noted that the Examiner has established a *prima facie* case of obviousness against claims 15-17, 19-20, 23-25, 28-34, based on the assumption that all the claim limitations are taught or suggested in the prior art references to Arima, Arima in view of Haekkinen, Arima in view of Kapps et al, and Arima in view of Schmidt et al.

Such assertion is respectfully traversed for the following reasons.

1. At least the following features of main claims 15, 30 and 33, are neither taught or suggested by any of the cited prior references:

a) *providing a plurality of holes spaced from each other deep in the foundation soil;*

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From the specification and drawings, from the amendment and from the submission "CBD-148. Foundation Movements" entered on March 16, 2001, it is clear for the person skilled in the art that the for injection are provided in depth so as to affect the foundation soil, i.e. at least the soil portion enclosing the "bulb of pressures".

Arima instead teaches only providing injection points, at rod ends, which are situated, at **the bottom of a foundation 2** (page 1, second paragraph, page 2, lines 2-3, page 5, last three lines, page 6, lines 5-6 from the bottom of the page, and related figures 1-3, i.e. **immediately under the foundation of the buliding**, to act as a jack to restore a tilted building at its plane level (see page 4, 3-4th paragraphs).

Moreover, Arima teaches, as the person skilled in the art would readily understand, to select the number of injection sites **over and under the foundation bottom of the building**, as a function of foundation extension, while not hinting whatsoever to an **in-depth extension**, away from the immediate vicinity of the foundation in the foundation soil, of the injection area.

constantly monitoring level variations of the soil and/or built structures overlying the injection zone to detect the moment when the built structures and/or the soil surface, overlying said injection zone, begins to raise which is the moment in which the compaction of the soil has reached levels generally higher than a required minimum value at which the soil lying below and around said injection zone withstands and rejects dynamic and static weights exerted thereon by said built structures and by overlying and adjacent soil masses;

Arima teaches measuring the rising rate of the structure ...until the structure is restored to the normal condition, (page 18, lines 11-15).

The allegedly corresponding feature, as claimed in the context of the invention, is in fact completely different and regards the monitoring of *the level variations... to detect the moment...when the built structure and/or the soil surface begins to raise which is the moment in which...*

Thus the slightest soil/level level variation is monitored/detected which is, in the condition of the claimed invention, indicative of reaching the necessary bearing capacity

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of the foundation soil (i.e. of at least the soil volume affected by the bulb of pressures).

In this respect it is also submitted that Arima deals with the different problem of restoring to a plane level a tilted building, the problem being solved by way of a method of injection of expanding fluid under the foundation bottom to act as a jack.

Hence the purpose of Arima is that of lifting a building up to a preset, plane level, by a jack effect while creating a "raft" layer 31 supporting the building foundation over a wider area providing a better distribution of the weight forces on the ground (see page 16, second paragraph, page 18, lines 20-21).

2. In the applicant's claimed invention both the problem to be solved (improving the bearing capacity of the foundation soil) and the method (invention) claimed as a whole, by the features of claims 15, 30 and 33, are different, in that it is not the restoring of a tilted building which is followed but the improvement of the bearing capacity of the foundation soil (soil mass affected by the pressure bulb).

This is obtained by injecting the expandable fluid in the foundation soil and detecting the moment of attaining any soil/building level variation (see features a and b above in combination with the other claimed features) as indicative of the reaching of the satisfactory bearing capacity of the foundation soil.

Arima measures instead the level of the building and continues injection at the bottom of the building foundation up to the restoring of the same to its initial horizontal level.

3. It is further submitted that none of the prior art references neither disclose nor suggest, alone or in combination, improving bearing capacity of foundation soils by a method with the combination of steps of the claims 15, 30 and 33, involving injecting a very fast expandable substance at least in the soil mass affected by the bulb of the pressures.

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It is eventually submitted that Arima and all of the other prior references disclosed in the previously submitted IDS, have been assessed and discussed during an opposition procedure (a kind of reexamination of a granted patent) against the corresponding European Patent, in which procedure the claims of the granted patent have been reconfirmed with the scope substantially as that of the claims now pending in the instant application.

The non-pertinence of Arima, of Arima in combination with other prior references, or of any other combination of the cited prior art was also acknowledged during such procedure.

While it is believed that the amended claims properly and clearly define the present invention, applicant would be open to any suggestion or amendment the Examiner may have or propose concerning different claim phraseology which, in the Examiner's opinion, more accurately defines the present invention.

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Respectfully submitted,



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